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ABSTRACT

In the area of composition, computer assisted instruction (CAI) must move beyond the limited concerns of the current-traditional rhetoric to address the larger issues of writing, become process-centered, and involve active writing rather than answering multiple-choice questions. Researchers cite four major types of interactive CAI, the last of which addresses higher-order concerns: (1) drill and practice programs, (2) tutorial programs, (3) text-editor programs, and (4) dialog systems. The CAI dialog programs can offer advantages for teaching rhetorical invention, specifically in the generating stage of the composing process, that the other three cannot. Both systematic and unsystematic writing heuristic activities can be programed for CAI. Two such invention programs are QUEST and FREE. One of the advantages of computer assisted invention strategies is that the programs can be individual, generative, and encouraging. The heuristic can also address specific rhetorical problems. Finally, the computer encourages students to spend time prewriting, an important activity that many poor writers ignore completely. While there is a lack of commercially prepared software packages dealing with rhetorical invention, a number of CAI invention programs written by writing teachers are being exchanged among campuses across the country. (Information for obtaining the QUEST and FREE programs, and a select bibliography on computers and composition are included.) (HTH)

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BEYOND WORD PROCESSING: RHETORICAL INVENTION WITH COMPUTERS

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Let me begin by stating that although learning about microcomputers for computer literacy is more popular, learning with computers is a more educationally significant application. Learning with computers involves using the computer as an alternative method of presenting, reviewing, and/or testing traditional course material. However, "to date, English instructors have utilized microcomputers primarily for lower-order concerns, teaching repetitive tasks--drill work in grammar, punctuation, spelling and vocabulary". Popular applications, such as PLATO, RSVP, TICCIT, and most recently Professor CRAM (Computer Ready Assist to Memory), a system using "competing and repeating" to teach five grammar units, promote what Richard Young characterized as current-traditional rhetoric, focusing attention on "the composed product rather than the composing process," paying specific attention to the "analysis of discourse into words, sentences, and paragraphs," correctness of usage, and appropriateness of style, often measured by readability (31). And when writing teachers choose to use these applications, they choose to promote a reductionist approach to writing, mastering discrete elements of language, rather than a constructivist approach, attending to larger discourse structures. In the area of writing instruction, CAI must move beyond the limited concerns of the current-traditional rhetoric. CAI must address the larger issues of writing, become process-centered, and involve active writing rather than answering multiple-choice questions. Some important criteria to consider for computer-assisted writing instruction include asking

if the software addresses significant writing problems and if it approaches writing from a true process orientation. The programs should also be rhetorically specific and accommodate a wide range of writing skills, but most importantly, computer-assisted writing instruction should involve students in writing.

Researchers cite four major types of interactive computer-assisted instruction (CAI), the fourth of which addresses higher-order concerns:

(1)Drill and practice programs--essentially programs acting as electronic workbooks, arranged to calculate the performance as well as the difficulty of the problem given the user.

(2)Tutorial programs--a step beyond drill and practice, programs actually directing the presentation in response to the student's performance. The tutorial's sophistication is achieved by the use of if-then branching structures in the program.

(3) Text-editor programs--programs functioning as an editor, often relying on readability formulas and spelling lexicons. Of course, a text-editor cannot judge comprehensiveness, persuasiveness, or other higher-order concerns.

(4) Dialogue systems--programs seemingly engaging the user in human interaction through encouraging remarks, noncommital phrases, and programmed questions. This fourth

category, variously named simulation or feedback, asks the user for active participation, clearly the most important feature of computer-assisted instruction. Borrowing from creativity theory, we can explain how computers can aid writing instruction: the CAI generates the first vector necessary in any creative act, as the first speaker in the dialogue, providing direction and motivation, while the writer, as the second speaker, generates the second vector, providing content for the conversation. The content provided by the writer is then used by the computer to continue the dialogue. CAI dialogue involves the computer and the user in reaction to each other, much like the structure of human dialogue, while the other types of CAI are more mechanical--drill and practice programs evaluating only the correctness of the response and proceeding in a linear fashion, tutorial programs branching only to different levels based on the response given, and the text-editor programs correcting only text generated on the computer. Thus, CAI dialogue programs can offer advantages for teaching rhetorical invention, specifically the generating stage of the composing process, that the other three cannot.

WHAT CAN A CAI INVENTION PROGRAM DO?

Many of us as teachers of writing make a conscientious effort to teach invention strategies to our student writers, stressing the importance of time spent thinking in systematic or

unsystematic ways about an assignment, engaging processes often represented as previous to the transcription process. Systematic heuristics posit a number of relevant questions asked as probes to examine a topic. Three popular systematic heuristics are the tagmemic heuristic of Richard Young, Alton Becker, and Kenneth Pike, the topoi of Aristotle reformulated as a series of questions by Richard Larson, and the dramatistic questions, the Pentad, that Kenneth Burke asks of literary works, reformulated as a general device for invention by William Irmscher.

Unsystematic heuristics, by contrast, require the writer to approach a writing task more informally--by free-associating, by brainstorming, or by continuously writing whatever relevant ideas and/or digressions are brought to mind by the topic. Rather than positing a set of pre-determined questions, this heuristic relies on the chain of associations in the memory of the writer to retrieve information about a topic. Two unsystematic heuristics are free-writing and journal keeping--advanced by Gordon Rohman and James Moffett, and popularized by Peter Elbow and Ken Macrorie. Each type of invention, and its numerous variations, works for a different approach to writing, for a different problem-solving style, and sometimes just for a different type of writing assignment.

Many of these heuristic activities can be programmed for computer-assisted instruction. I have written two computer-assisted invention programs--QUEST, a systematic questioning program, and FREE, an aptly named unsystematic

free-writing program. Teaching invention strategies on the computer offers a variety of invention strategy alternatives, informed by the rhetorical task at hand and the writer's representation of that task.

For example, Brenda logs onto the computer and loads a program called ASSIGNMENT to receive her writing task--a task which asks her to compose an argumentative paper about the desirability of restructuring education programs in high school. The computer itself loads the QUEST heuristic, an invention strategy based on the comprehensive model of Pat Hartwell. QUEST offers a wide range of possibilities. Brenda can answer content-related questions, goal-setting questions, or audience identification questions, depending upon the time she has available to her and her preferences. QUEST can ask the same question a teacher would in the writing conference--for example,

> BRENDA [here inserting the student's name], we've considered that EDUCATION [here inserting Brenda's topic] in the past was A JOKE, KIDS PASSING NO MATTER WHAT THEY DID [here inserting Brenda's earlier answer]. Now, let's consider what EDUCATION might become in the future. What do you think it might become?

The computer is also adaptable. Just as it can be directed to follow one heuristic strategy from a menu of choices, it also offers a number of choices, or "branches," within a single strategy. For example, Brenda might be considering her topic, education, by answering questions about comparison/contrast. If

this exploration seems especially fruitful, she continues in this mode, branching to more comparison questions. On the other hand, if Brenda answers the question and wishes to consider another type of question, she can direct the computer to return to the menu for another branching. This adaptability cannot be matched by a dittoed set of questions. It can however be matched by a good teacher, always alert to new avenues and possible twists and curves. And yet, even the best teacher's alertness can fail, especially for the last conference of the hour, or of the day. A computer, its electricity on, its disk spinning, its input devices connected, is always ready.

One of the advantages of computer-assisted invention strategies is that the programs can be individual, generative, and encouraging. For example, if Brenda had previously only been exposed to one type of systematic heuristic, such as Young, Becker and Pike's tagmemic matrix or the questions of Aristotle's topics, then she might have found rhetorical invention to be less than successful. However, the same writer, on-line with a computer-assisted invention program such as QUEST or FREE, could sample from a "menu" of available heuristic strategies for different rhetorical situations, at various times within a writing task, until she succeeded in invention.

In a similar fashion, the heuristic could address a specific rhetorical problem. For example, Brenda might, at some point in her work, feel a need to clarify her sense of audience. This student might remember that a particular heuristic strategy dealt

with the question of audience but she would probably be more successful if she knew that, merely by calling it up on a computer menu, a strategy would be available to her, a strategy designed to address that rhetorical question. For example, she could command QUEST, using its menu, to run a series of probes designed to help a writer consider her audience's educational background, values, and knowledge of and attitude toward her topic.

The computer, with a force beyond that of even the best teacher, encourages students to spend time prewriting, an important change since the activity is one which many poor writers ignore completely. It is now possible to keep the option of heuristic activities available at all times during the writing process, just as the editing mode is always available. Writers using a computer/word-processor quickly become aware of the recursiveness of revising. In the act of writing a sentence, writers are aware that they can easily correct surface errors as well as make global changes in the text. Writers who use a computer/word-processor gain a sense that electronic text, free floating and expendable, has a different "mode of existence" from that which is typed or handwritten, mechanically imprinted onto tablet, fixed and unchanging (W. Selfe 19-20). Word-processing programs have freed writers from the "first-write-then revise" paradigm. Invention programs such as QUEST afford the same possibility for the other side of the model--the prewriting process. A writer, once familiar with the heuristic options, will quickly become aware that at any given point in the writing

process, she can cycle back into the invention mode to do some brainstorming, problem solving, or tagmemic probing. A writer can file the text-so-far, using a simple command to store what has been written onto a permanent memory sector on the floppy disk, and then call up the menu of heuristic strategies. Another possibility is to split the screen and work on the heuristic strategy in the top half of the screen while retaining the text-so-far on the lower half of the screen. A writer who encounters writer's block will learn that one solution is to cycle into invention or revision activities. The weaker writer who is still stuck in a linear model can take advantage of the computer's ability to do two things at once: attend to a writing/word-processing program and offer a menu of other options--heuristic strategies in this case--at the top or bottom of the screen. The weaker writer would not only be able to use the techniques writing teachers have recommended, but would be reminded of the options available.

WHAT OTHER SOFTWARE IS AVAILABLE?

A check of the annotated bibliography of Ellen McDaniel confirms the lack of commercially prepared software packages dealing with rhetorical invention. However, a number of CAI invention programs written by writing teachers are being exchanged among campuses across the country. A heuristic based on the Aristotelian topics, developed for main-frame computers by Hugh Burns, is now available for Apple microcomputer use as ARISTO from John Harwood of Pennsylvania State University.

Another variation of the Aristotelian approach to prewriting is CREATE/RECREATE, developed by Valarie Arms of Drexel University. The tagmemic program TAGI, again written by Hugh Burns for main-frame computers, is part of WRITER'S HELPER, written by William Wresch, distributed by Conduit. BRAINSTORM, developed by Michael Spitzer of New York Institute of Technology, provides an open-ended invention program with content-specific questions. The WRITE WELL series, written by Deborah Holdstein, and also distributed by Conduit, includes six guided questions in the prewriting program. Various problem-solving techniques for prewriting, similar to the synectics strategies developed by William Gordon, have been programmed for CAI prewriting strategies as CREATIVE PROBLEM SOLVING by Ray Rodrigues and Dawn Rodrigues of New Mexico State University.

An unsystematic approach to writing, approaching a writing task by free-association exploration rather than answering a set of pre-determined questions, is also represented in CAI invention programs. Free-writing programs are contained in Wresch's WRITER'S HELPER (BRAINSTORMS), in Ruth Von Blum and Michael Cohen's WANDAH (now marketed as HBJ WRITER by Harcourt Brace Jovanovich), in Bolt Bernanek and Newman's QUILL (cited in Shostak's Computers in Composition Instruction), and in Cynthia Selfe's WORDSWORK (a.k.a. WORDSWORTH II).

Other areas of the planning process are also being explored. Helen Schwartz has added a program called ORGANIZE to her SEEN hypothesis-testing prewriting package, containing

AUDIENCE ANALYSIS, a program routine designed to help a writer consider her audience's educational background, values held, and previous knowledge of and attitude toward the writer's topic.

From what we have seen about computer-assisted writing instruction, an important change may be noted: rhetoricians are no longer looking for the perfect finite heuristic to program for CAI. The emphasis has shifted to developing a range of heuristic strategies, available to writers at any point in the writing process, through the computer delivery system. I believe this shift will be beneficial as we move beyond word-processing toward a systems approach to CAI, providing computer-assisted help for all phases of the writing process.

BEYOND WORD PROCESSING: RHETORICAL INVENTION WITH COMPUTERS

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October, 1985

TITLE: FREE
AUTHOR: James Strickland
PUBLISHER OR MARKETING ORGANIZATION: Obtain program from author
ADDRESS: 313 Eisenberg Hall
Slippery Rock University
Slippery Rock, PA 16057
PHONE: (412) 794-7265
AVAILABILITY: Available now
HARDWARE: Apple II series, DECmate II, IBM PC in progress
OPERATING SYSTEM: DOS 3.3 (Apple), Resident (DEC), PC-DOS 2.0 and 2.1
MEMORY REQUIREMENT: 48 K
LANGUAGE PROGRAMMED IN: BASIC
PRICE: No charge for educational use. Send self-addressed stamped envelope and a floppy diskette.
BRIEF DESCRIPTION: FREE, developed in 1982, is a rhetorical invention program designed to direct student-writers to explore their topic by free-writing. This strategy for invention is based upon Elbow's Writing Without Teachers (Oxford, 1973), generating material for an essay in a series of free-writings alternating with periods of focusing on a "center of gravity." The program will provide a print-out of the writing generated and store it on the disk for later use. FREE has been revised with suggestions from users.

TITLE: QUEST
AUTHOR: James Strickland
(Specifications are same as for FREE program above.)
BRIEF DESCRIPTION: QUEST, developed in 1982 but expanded and improved in 1985, is a rhetorical invention program, designed to ask student-writers a series of specific questions about their topics. The questions, based on the systematic heuristic found in Haltwell's Open to Language (Oxford, 1982), help writers explore a topic in the prewriting stage, generating material for use in the writing. The program will provide a print-out of the writing generated and store it on the disk for later retrieval.

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BEYOND WORD PROCESSING: A SELECT BIBLIOGRAPHY

ON COMPUTING:

Arms, Valarie. "Creating and Recreating." College Composition and Communication 34 (1983): 355-358.

Breininger, L. J., and S. Portch. "A Visit to Professor Cram: Attractive Computer Learning." College Composition and Communication 34 (1983): 358-361.

Burns, Hugh L. "A Writer's Tool: Computing as a Mode of Inventing." Paper presented at the New York College English Association Conference, Saratoga Springs. ERIC Document Reproduction Service, 1980, No. ED 193 693.

Etchison, Craig. "Who's Making the Decisions--People or Machines? Computers and Composition 2.4 (1985): 17-26.

Hocking, J., and C. Visniesky. "Choosing a Microcomputer System: A Guide for English Instructors." College Composition and Communication 32 (1983): 218-220.

Holdstein, Deborah. "Evaluating the Effectiveness of Computerized Programs in Writing--Preliminary Results." Paper presented at the Conference on College Composition and Communication. New York, 1984.

Jaycox, Kathleen M. "Computer Application in the Teaching of English. Illinois Series on Educational Applications of Computers. ERIC Document Reproduction Service, 1979, No. ED 183 196.

Leibowicz, Joseph. "[ERIC/RCS Report:] CAI in English." English Education 14 (1982): 241-247.

McDaniel, Ellen. "A Bibliography of Text-Analysis and Writing Instruction Software." Temple University Working Papers in Composition, 1985.

Rodrigues, Raymond J., and Dawn W. Rodrigues. "Computer-based Invention: Its Place and Potential." College Composition and Communication 35 (1984): 78-87.

Schwartz, Helen J. "Teaching Writing with Computer Aids." College English 46 (1984): 239-247.

Selfe, Warren. "Computers: Changing Writers' Relationships with their Composing Processes." Focus 9 (1983): 17-21.

Selfe, Cynthia. "Wordsworth II: Process-based CAI for College Composition Teachers." In W. Wresch (Ed.), The Computer in Composition Instruction: A Writer's Tool (pp. 174-190).

Urbana: National Council of Teachers of English, 1984.

Shostak, Robert. (Ed.), Computers in Composition Instruction. Eugene, OR: International Council for Computers in Education, 1984.

Von Blum, Ruth, and Michael Cohen. "WANDAH: Writing-aid and Author's Helper." In W. Wresch (Ed.), The Computer in Composition Instruction: A Writer's Tool (pp. 154-173). Urbana: National Council of Teachers of English, 1984.

Wresch, William. "Questions, Answers, and Automated Writing." In W. Wresch (Ed.), The Computer in Composition Instruction: A Writer's Tool (pp. 143-153). Urbana: National Council of Teachers of English, 1984.

ON COMPOSING:

Burke, Kenneth. A Grammar of Motives. Englewood Cliffs, New Jersey: Prentice Hall, 1945.

Elbow, Peter. Writing Without Teachers. New York: Oxford University Press, 1973.

Hartwell, Patrick. Open to Language. New York: Oxford University Press, 1982.

Irmscher, William. The Holt Guide to English. New York: Holt, Rinehart & Winston, 1970.

Larson, Richard L. "Discovery Through Questioning: A Plan for Teaching Rhetorical Invention." College English 30 (1968): 126-134.

Macrorie, Ken. Telling writing. Rochelle Park, New Jersey: Hayden, 1970.

Moffett, James. Teaching the universe of discourse. Boston: Houghton, Mifflin, 1968.

Rohman, D. Gordon. "Pre-writing: The Stage of Discovery in the Writing Process." College Composition and Communication 16 (1965): 106-112.

Young, Richard E., Alton L. Becker, and Kenneth L. Pike. Rhetoric: Discovery and Change. New York: Harcourt, Brace & World, 1970.